

**HIGH-CAPACITANCE COLLOID ELECTROLYTE AND PREPARING PROCESS THEREOF**RECEIVED  
CENTRAL FAX CENTER

SEP 11 2007

Publication number: CN1056019

Publication date: 1991-11-06

Inventor: LIANXIANG WANG (CN); ANCHEN ZHENG (CN);  
SHUO ZHENG (CN)

Applicant: WANG LIANXIANG (CN)

Classification:

- International: H01M10/10; H01M10/06; (IPC1-7): H01M10/10

- European:

Application number: CN19901002353 19900426

Priority number(s): CN19901002353 19900426

Report a data error here

**Abstract of CN1056019**

This colloid electrolyte contains such components (wt.% and taking colloid electrolyte as 100) as silica sol (3-9.9, counting by SiO<sub>2</sub>) and sulfuric acid (48.1-75). The ratio (g/g) of sulfuric acid to SiO<sub>2</sub> is 4.5-10.6. It also contains aluminium hydroxide (0.1-0.5, counting by Al<sub>2</sub>O<sub>3</sub>) for increasing its capacitance. Its preparing process is to simultaneously drop silica sol and sulfuric acid into reactor. Resultant colloid electrolyte features not hydrating, not cracking and high capacitance up to 91.6%, and is suitable for the silica gel lead-acid accumulator for high-power start.

Data supplied from the [esp@cenet](mailto:esp@cenet) database - Worldwide

**English translation of CN1056019A****Abstract**

A high capacity colloid electrolyte is provided. The colloid electrolyte contains (wt%, based on the colloid electrolyte) 3-9.9% silica sol (in terms of  $\text{SiO}_2$ ) and 48.1-75% sulfuric acid. The ratio of sulfuric acid/ $\text{SiO}_2$  (g/g) is 4.5-10.5. The colloid electrolyte also contains 0.1-0.5 aluminum hydroxide (in terms of  $\text{Al}_2\text{O}_3$ ) to increase the capacity. The preparation process thereof is to simultaneously drop silica sol and sulfuric acid into the reaction vessel, which method is easy to implement with low cost. The resulted colloid electrolyte features not hydrating and not cracking with the capacitance up to 91.6%, and is suitable for the silica gel lead-acid storage battery for high power start.

**Claim 4**

A process for preparing a high capacity colloid electrolyte, wherein adding silica sol having a silica particle surface area of 150-250  $\text{m}^2/\text{g}$  and sulfuric acid under continuous stirring, so that the resulted colloid electrolyte contains (wt%, based on the colloid electrolyte) 3-9.9% silica sol (in terms of  $\text{SiO}_2$ ), controlling the reaction temperature to be 20-50°C and cooling for 1-4 hours with continuous stirring until the temperature of the reaction mixture colloid electrolyte being 30°C or less, discharging the resulted colloid electrolyte, the process being characterized in that, the colloid electrolyte contains (wt%, based on the colloid electrolyte) 48.1-75% sulfuric acid and dropping the silica sol and sulfuric acid simultaneously into the reaction vessel.

**Claim 6**

A process for preparing a high capacity colloid electrolyte according to claim 4, characterized in that, adding silica sol and sulfuric acid so that the colloid electrolyte contains 3-9.9% silica sol (in terms of  $\text{SiO}_2$ ) and 48.1-75% sulfuric acid, and the ratio of sulfuric acid/ $\text{SiO}_2$  (g/g) is 4.5-10.5.